REPORT
ENVIRONMENTAL REVIEW/DEVELOPABILITY ANALYSIS
AREAS A AND B NORTH
PLAYA VISTA DEVELOPMENT
LOS ANGELES, CALIFORNIA

URS PROJECT NO. 59-D0215011.01 MAY, 2002

PRIVILEGED & CONFIDENTIAL ATTORNEY WORK PRODUCT

May, 2002

The Trust for Public Land 116 New Montgomery Suite 300

San Francisco, California 94105

The Trust for Public Land 3250 Wilshire Blvd.

**Suite 2003** 

Los Angeles, California 90010

Attention: Brian Kirchoff Attention: Jennifer Hranilovich

Re:

Report

Environmental Review/Developability Analysis

Areas A and B North Playa Vista Development Los Angeles, California

URS Project No. 59-D0215011.01

Dear Mr. Kirchoff and Ms. Hranilovich:

Transmitted herewith is our report entitled, "Environmental Review/Developability Analysis, Areas A and B North, Playa Vista Development."

Please contact us if you have any questions.

Very truly yours,

URS

Mark Morrel

Manager, Strategic and Compliance Services

Mark Morrel/NWS

Richard N. Stout

Associate/Principal Geologist

URS Corporation 911 Wilshire Boulevard, Suite 800 Los Angeles, CA 90017-3437 Tel: 213.996.2200

Fax: 213.996.2290

# TABLE OF CONTENTS

Sect	Page ?	No.
1.0	INTRODUCTION	1
2.0	OBJECTIVES AND SCOPE	2
3.0	FINDINGS	
	3.1.1 Subsurface Gas	4 9
	3.1.4 Dredge Sediments	11 12
	3.1.7 Offsite Potential Sources of Contamination 3.1.8 Other Issues 3.2 GEOTECHNICAL/GEOHAZARDS ISSUES	14 15
	3.2.1 Geologic Setting	18 19
	3.2.4 Foundation Schemes	21
	3.3.1 History of Entitlements	23 25
	CONCLUSION, RECOMMENDATIONS AND ESTIMATED COSTS	27
5.0	REFERENCES	30

# **FIGURES**

Figure 1 Area Map Figure 2 Methane Map

### LIST OF APPENDICES

Appendix A EDR Database Report Site Photographs Appendix B CDM (2000c) Report Appendix C Appendix D CLA (2001) Report Appendix E Kleinfelder HHRA Report SSC/TGC Memorandum Appendix F Appendix G Site Disturbance Map Cleanup and Abatement Order 98-125 Appendix H

# REPORT ENVIRONMENTAL REVIEW/DEVELOPABILITY ANALYSIS AREAS A AND B NORTH PLAYA VISTA DEVELOPMENT LOS ANGELES, CALIFORNIA

### 1.0 INTRODUCTION

URS Corporation is pleased to submit this report summarizing the findings of our environmental review and developability analysis for Area A and the northern (residential development) portion of Area B (herein referred to as Area B North) of the Playa Vista development project. URS was contracted by The Trust for Public Land (TPL) to review environmental and engineering conditions for property as part of TPL's due diligence related to potential acquisition of the subject property. The focus of the project was reviewing numerous environmental and engineering documents that were provided, primarily by Playa Capital Company (PCC). To supplement the provided materials, URS also conducted a regulatory agency database search, site reconnaissance, and interviews.

### 1.1 SITE LOCATION

The location of the project site is shown on Figure 1. The project site is currently vacant land located between Lincoln Boulevard on the east, Marina del Rey to the north and west, and the rest of Playa Vista Area B on the south. Dockweiler Beach State Park and the Pacific Ocean are located approximately 4,000 feet southwest of the subject property. The channelized Ballona Creek separates Area A from Area B North. Area A consists of ±138.47 acres of unincorporated land in the County of Los Angeles. Area B North consists of approximately ±54.19 acres all within the City of Los Angeles. Operational gas wells associated with the Southern California Gas Company Playa Del Rey Gas Storage Field are located at the western edge of Area A and Area B North.

### 1.2 SITE SETTING

The subject property is relatively flat, undeveloped land that is partially covered with grass and brush. Site elevation ranges from approximately +5 feet above mean sea level (msl) to +15 feet msl. Five to fifteen percent of the property is designated wetlands, depending on

which wetlands definition is used. Before the area was developed in the mid-1900s, it was a much larger wetlands region.

The subject property is located in a region referred to as the Ballona Gap. The Ballona Gap is occupied by Ballona Creek and forms a broad floodplain filled with alluvial sediments. The area is situated within the Santa Monica Groundwater Basin. Groundwater below the site is at a depth of approximately 5 to 15 feet.

The site area is a historic oil production area referred to as the Playa Del Rey Oil Field. The oil field consists of two subareas – the Ocean Front Area located along the beach southwest of the subject property and the Del Rey Hills Area located due south of the subject property, on Area B South and further south within the El Segundo Sand Hills. No oil production is presently occurring at the subject property.

In 1943, after depleting the oil reserves, the Del Rey Hills Area was converted to a natural gas storage reservoir. The gas storage operations were purchased by the Gas Company in 1959 and are still in use today. The majority of the gas storage facilities are located on Area B South, but the gas storage reservoir underlies the southwest portion of Area A and Area B North. Six wells that are used for monitoring of the gas storage reservoir are located at the southwest end of the subject property.

### 2.0 OBJECTIVES AND SCOPE

The project objectives were as follows:

- 1. Evaluate the developability and construction feasibility for the subject property with respect to Alternative 8 of the in-progress administrative Draft Supplemental EIS/EIR for the second phase of development at Playa Vista.
- 2. Identify and evaluate engineering and environmental risks and potential liabilities associated with the property that would affect the appraisal value of the property.
- 3. Estimate costs to mitigate identified issues so the property can be developed in accordance with Alternative 8.

To address the project objectives, URS performed the following tasks during the initial phase of the project:

- Playa Vista File Review. URS reviewed file information located at the offices of PCC and the Los Angeles Office of the Trust for Public Land. The review included numerous reports, correspondences, maps and photographs pertaining to CEQArelated matters, contamination, geotechnical, and geohazards issues.
- Agency Database Review. URS reviewed regulatory agency databases for potentially
  contaminated sites in the vicinity of Playa Vista to evaluate potential impacts of these
  sites on the subject property. A copy of the database report that was prepared by
  EDR; is included in Appendix A. In addition, regulatory agency files for several sites
  that appear to potentially threaten the subject property with environmental
  contamination were reviewed.
- Site Reconnaissance. To observe and document the current site conditions and the nature of neighboring properties, URS conducted a reconnaissance of the subject property and, to the extent that it is accessible, a "drive-by" survey of the site vicinity. The subject property was inspected for evidence of soil and surface water contamination as well as potential sources of subsurface contamination (such as abandoned oil wells). In addition, surface soils were viewed for geotechnical properties and evidence of geologic hazards. Representative photographs were taken of the site and potential problem areas. These photographs are included in Appendix B.
- Interviews. URS conducted interviews with PCC personnel and others listed in Section 5.0 (References), including representatives from the Spirit of the Sage Council (SSC) and The Grassroots Coalition (TGC), to further analyze issues identified in the written record.
- Analysis and Reporting. At the conclusion of the initial phase, the information collected during the project was analyzed and this written report was prepared.

### 3.0 FINDINGS

### 3.1 HAZARDOUS MATERIALS/CONTAMINATION ISSUES

Based on our review of numerous documents, some of which are referred to herein and listed in Section 5.0 (References), and discussions with PCC personnel and other third parties, URS has identified several hazardous waste/contamination - related issues at the subject property (i.e. Area A and Area B North). These issues are summarized below.

### 3.1.1 Subsurface Gas

Subsurface gas, in particular methane, has been identified at the Playa Vista development, primarily by Camp, Dresser & McKee, Inc. (CDM, 1999, 2000a, 2000b, 2000c, 2001a, 2001b) and Exploration Technologies, Inc. (ETI, 2000). Subsurface gas has been a known environmental problem at the Playa Vista development since at least the 1980s when it was observed during geotechnical drilling operations (ETI, 2000). The assessment of the soil gas issue became more rigorous in the late 1990s as construction at the site was nearing final approval. Kleinfelder (2001) reports that over 1,200 soil gas samples were collected and analyzed throughout the Playa Vista development. Most of this sampling was focused on Area D, where by far the highest frequency of elevated subsurface gas detections have been found and the highest gas concentrations (up to 75% methane on the west side of Area D near Lincoln Blvd.) have been measured (ETI, 2000). It is noteworthy that, with proper mitigations, residential development has been approved for the west side of Area D, within the area of highest detected methane concentrations.

Shallow soil gas surveys have also been conducted on Area A and Area B North (ETI, 2000 and CDM, 2000c) and are discussed below. A copy of CDM (2000c) is provided in Appendix C as a comprehensive recent summary of soil gas results for Area A and Area B North.

### 3.1.1.1 Methane Occurrence

Soil gas surveys have been performed in Area B North by ETI (2000) and CDM (2000c). A total of 78 soil gas probes have been sampled in this area (Figure 3). Methane was detected in 100% of the samples analyzed from Area B North. Elevated levels of methane have been detected at the south edge, up to 17,700 parts per million (ppm), and east edge (100 – 1,000 ppm range) of Area B North. However, most of the methane detections are in the 1 – 10 ppm range. The methane detected along the east edge of Area B North appears to be an extension of the methane zone centered on the west side of Area D. Soil gas surveys have been performed in Area A also by CDM (2000c). A total of 77 soil gas probes have been sampled in this area (Figure 2). Methane was detected in 100% of the samples in Area A, generally in the 1-4 ppm range.

Although it is an asphyxiant at high concentrations, methane does not cause systemic health effects such as lung, liver, or kidney damage (Kleinfelder, 2001a). Methane is considered to be primarily an explosion hazard, as it will combust if concentrated and subjected to an ignition source. Methane is flammable at a concentration of 5-14%. Fire authorities generally consider methane an explosion hazard at the lower explosive limit (LEL), i.e. 5% methane in air (50,000 ppm). Methane will concentrate if trapped, such as below the slab foundation of a building. Therefore, the City of Los Angeles, Building & Safety Department (LABSD) requires certain mitigations in known methane areas for new construction projects, regardless of how low the previous methane detections were.

Because of the detected methane in and around Area A and Area B North, mitigation would likely be required prior to development. The likely mitigations as indicated in CLA (2001), Appendix D, would be the Level I through III mitigations described in Chapter 71 of the City of Los Angeles Building Code and the LA City Department of Building and Safety's Memorandum of General Distribution #92. Level I mitigations are for areas exhibiting methane concentrations below 100 ppm, Level II mitigations are for areas of methane between 100 and 12,500 ppm, and Level III mitigations are for areas above 12,500 ppm methane. Basically, Level I mitigations consist of emplacement of an impermeable membrane and 12-inch gravel layer below the planned structure, as well as vent pipes below the membrane and methane detectors inside the structure. Level II includes Level I measures

plus automatic vent systems that are triggered by high methane levels. Level III measures consists of Level I/II mitigations plus an active subsurface venting system.

### 3.1.1.2 Methane Source

Basically, three plausible sources of the methane have been identified: 1) naturally occurring "thermogenic" methane associated with the underlying former oil production zone; 2) "biogenic" methane generated in shallow anaerobic soil conditions such as swamp deposits; and 3) leakage from the Gas Company natural gas reservoir below the site. Various investigators have opined on the source of the methane gas found in the subsurface at Playa Vista. ETI (2001), Zymax Forensics (2000), CDOG (2000), Kleinfelder (2000), and LADBS (2001), all concluded that the methane is primarily thermogenic and not a result of leakage from the Southern California Gas Company Playa Del Rey Gas Storage Field. In particular, Dr. Ian Kaplan of Zymax, a well-known forensic geochemist in southern California, compared Gas Company reservoir samples with shallow soil gas samples collected at the site. Dr. Kaplan, on the basis of chemical and isotopic characteristics, concluded that the shallow soil gas did not originate from the Gas Company reservoir. Dr. Victor Jones of ETI, a company that specializes in oil field soil gas, concurred with Dr. Kaplan's conclusions. ETI collected gas samples from the gas storage and observations wells and compared the chemical and isotopic data from these samples with that of shallow gas samples ETI had collected, thus concluding no resemblance between the two gas types and therefore no evidence of leakage from the gas reservoir.

Based on the information reviewed during this project, URS concurs that methane gas at the Playa Vista site appears to originate from a thermogenic source such as the oil production zone below the site, rather than the Gas Company gas storage reservoir.

# 3.1.1.3 Other Gases

Other gases, notably benzene, toluene, ethylbenzene, and xylenes (BTEX), and well as hydrogen sulfide have been detected in subsurface gas at the Playa Vista development site (ETI, 2000 and CDM, 2000c). The frequency of detection and gas concentration are highest in Area D. A number of references to evidence of subsurface hydrogen sulfide (e.g. rotten egg odors) were noted in various technical reports. For instance, in their groundwater monitoring reports, CDM's field notes refer to "strong H<sub>2</sub>S odors" or "smelled rotten eggs"

in some of the monitoring wells located in Area D. Similarly, an archaeological report by Statistical Research Inc. (1998) for a site in Area D indicated the survey had encountered "levels of methane and H<sub>2</sub>S that commonly exceeded safe standards in test holes". These references are qualitative, that is, samples or measurements were not taken so the findings were not quantified. ETI (2000) reports that BTEX and H<sub>2</sub>S: (1) show no correlation with methane or other light hydrocarbons; and (2) probably represent near-surface contamination not associated with the thermogenic source of methane.

Although BTEX and H2S have been detected in Area D, ETI (2000) and CDM (2000) do not indicate significant detections of BTEX or H<sub>2</sub>S within Area A and Area B North. In fact, most of the H<sub>2</sub>S measurements were non-detect (ND). Detected H<sub>2</sub>S levels ranged from 0.001 to 0.004 ppm. According to Kleinfelder (2001), background H<sub>2</sub>S levels in California range from 0.003 to 0.096 ppm. Benzene (at 0.12 ppm and 1.05 ppm) was found in only two of the samples tested in Area A and Area B North. Toluene, ethylbenzene, and/or xylenes were detected in approximately 10% of the samples at less than 1 ppm, with one exception (ethylbenzene at 1.11 ppm). Light hydrocarbons such as ethane, ethylene, propane, propylene, isobutene, and n-butane have also been detected in Area A and Area B North, but at substantially lower (i.e., an order of magnitude or more) than the methane detections.

Kleinfelder (2001) prepared a Human Health Risk Assessment (HRRA) for the Playa Vista development (Appendix E), including the subject property, using BTEX and H<sub>2</sub>S soil gas data. The report was prepared on behalf of the City of Los Angeles. Using simplifying conservative assumptions that would tend to over estimate health risk in conjunction with the data summarized above, Kleinfelder concluded no unacceptable risks with respect to potential BTEX and H<sub>2</sub>S indoor air exposures for future commercial and residential occupants of the site. The California Regional Water Quality Control Board (RWQCB), with input from the Office of Environmental Health Hazard Assessment (OEHHA), concurred with Kleinfelder's conclusions.

### 3.1.1.4 Lincoln Boulevard Fault

This section discusses the previously inferred Lincoln Boulevard Fault, which was interpreted at one time to be located east of Lincoln Boulevard in Area D. It is important to note that the fault was never thought to be located on the subject property.

In ETI (2000), it is speculated that a previously unidentified fault, the so-called Lincoln Boulevard Fault, was providing a pathway for migration of deeper gases into the shallow

subsurface, thus explaining the extraordinarily high methane levels along the west side of Area D. ETI's interpretation of the fault was based primarily on the linear nature of the methane detections and older (1935) surface geology. However, evidence produced by Earth Consultants International (2000) and Davis and Namson (2001) refutes this interpretation.

Davis and Namson (2000) conducted a more thorough evaluation of potential faulting in the vicinity of Lincoln Boulevard. Their methods included: (1) a literature and data search; (2) subsurface mapping and stratigraphic interpretation; (3) interpretation of seismic reflection data; and (4) review of other geophysical survey data for the site area. In short, Davis and Namson concluded that none of the geological information reviewed indicated faulting along Lincoln Boulevard. Moreover, Davis and Namson reviewed the geologic basis for ETI's postulated Lincoln Boulevard Fault and concluded the evidence cited by ETI does not support the presence of such a fault. ETI subsequently retracted their interpretation of the Lincoln Boulevard Fault in a letter dated January 31, 2000 (ETI, 2000b).

The Draft EIS/EIR (2001) concludes that "In summary, there is no historic geologic data to support the presence of the proposed Lincoln Boulevard Fault. In fact, all evidence above points against the presence of the Lincoln Boulevard Fault". Based on the information reviewed during this project, URS concurs that there does not appear to be conclusive evidence supporting the existence of the so-called Lincoln Boulevard Fault.

### 3.1.1.5 Interviews

Representatives of SSC and TGC met with URS and shared their knowledge and evidence of subsurface gas leakage in the Playa Vista/Marina Del Rey area. Their concerns are summarized is a memorandum from Kathy Knight of SSC dated February 5, 2002, which is included in Appendix F. As an example of the concerns they wish to register with TPL, the representatives showed us a videotape "documenting gas leaks" below Ballona Creek and from an abandoned oil well that is now submerged in a lagoon in Marina Del Rey. The videotape showed gas bubbles emanating from the surface of Ballona Creek and from a submerged, approximately 16-inch diameter capped and abandoned oil well at a volume displacement rate of perhaps several cubic feet per minute per square foot of water surface area. Analytical data for the emanating gases was not provided to us.

# 3.1.1.6 **Summary**

In summary, subsurface gas, in particular methane, is a recognized environmental issue in Area D of the Playa Vista development; however, with two exceptions, only minor levels of methane (i.e. less than 10 ppm) have been detected in Area A and Area B North. The source of the methane appears to be seepage from natural gas sands located below the site, but not leakage from the gas storage field. If the subject site is to be commercially or residentially developed, additional data collection is recommended to further evaluate the subsurface distribution and significance of the subsurface gas. If needed, engineering controls (such as gas barriers, vents and monitoring devices) can be used to mitigate the buildup of subsurface methane gas in and below structures. Indeed, it is our understanding that these controls have been approved and designed, and are being built at the ongoing development in Area D.

If commercial or residential structures are not built at the site, the potential for subsurface methane buildup is lower (i.e. structures can "trap" and concentrate methane), as is the risk of personal injury caused by a methane explosion. Therefore, the additional data collection may not be required in the event the site is not to be developed.

### 3.1.2 Potential Contamination Associated with Former Oil Field Use

According to Law/Crandall (1988), California Division of Oil and Gas (DOG) records for the location and construction status of present and former oil wells were reviewed as part of its preliminary environmental audit. The findings revealed that six oil wells were drilled on the western portion of Area A. The former oil wells have been converted for use as gas wells. The wells are owned by the Southern California Gas Company. Del Rey wells Number 13, 14, 15, 17, and 19 were listed as active and were drilled in 1936-1937 by Union Oil Company. Del Rey 16 was abandoned in 1938. Another former oil well is located at the west end of Area B North; however, details concerning this well have not been found.

The former oil wells were part of the Playa Del Rey oil field. Oil exploration was started in the oil field in 1921 and production commenced in 1929. Production reached its peak in 1931. In 1942, the depleted oil reservoir was converted to an underground natural gas storage facility (ETI, 2000). Ownership of Del Rey wells 14 through 17 and 19 was transferred to the Gas Company in 1959. Del Rey 13 was transferred in 1961. The wells are now used for the injection and storage of natural gas. Currently, there is no oil production occurring onsite.

The well heads and concrete pads were observed by URS to be clean and free of debris. Profuse vegetation was observed outside the fenced well enclosure. Vegetation was stressed near the wells as herbicides appear to be routinely sprayed around the wells to keep vegetative growth down. However, no evidence of crude oil or contamination was observed in the vicinity of the wells.

Potential environmental concerns typically associated with oil exploration and production properties include contaminants that can be found in drilling mud and oil production sumps and pits. Based our experience investigating and remediating numerous oil properties in southern California, many oil exploration/production properties have some amount of residual soil contamination. The contaminants could include petroleum hydrocarbons, volatile organic compounds such as BTEX, and heavy metals that can be found in crude oil or drilling muds. Localized crude oil and metals contaminated soils may be present in the subsurface, yet not evident at the surface, near the existing wells.

Apparently, very little investigation of the former oil field features has occurred. ENSR (1997), Law/Crandall (1996), and Clayton Environmental Consultants (1995) reported the potential for contaminated soil due the former use of the property. In 1995, Clayton collected soil samples from two depressions thought to be indicative of former sumps near wells Del Rey 14 and 17. The samples were collected from ground surface to a depth of 10 feet. Petroleum hydrocarbons were detected at concentrations of up to 430 milligrams per kilogram (mg/Kg). Clayton recommended that all areas of potentially contaminated soils be adequately investigated and remediated, but we found no evidence that the investigation had been completed. Followup assessments in the vicinity of the oil wells to determine the extent and significance of the detected hydrocarbon contamination have apparently not been conducted.

### 3.1.3 Oil Well Abandonment

According to California regulations, new development over or within 25 feet of old oil wells requires that they be re-abandoned to current standards or otherwise properly mitigated with respect to the new construction. Consequently, depending on final site development plans, the seven former oil production wells at the subject property may need to be abandoned or re-abandoned. This basically entails drilling out the old well, grout sealing the wells over the production intervals and in some cases building a surface vent. This can be a cumbersome and costly process. It is our understanding that six of the seven oil wells are now operated by the Gas Company as gas injection or monitoring wells. This being the case,

the Gas Company may be responsible for the well re-abandonments. Indeed, it may be possible for the gas wells to co-exist with the development, depending on the exact nature of the development in the vicinity of the wells and regulatory approvals. In the event that the property is not developed, we presume the Gas Company would continue to operate the wells as they do today.

# 3.1.4 Dredge Sediments

ENSR (1997) prepared a Data Review and Limited Phase II assessment of Areas A, B, C, and D at Playa Vista as part of a due diligence project. Because of the use of Areas A and C for depositing dredge spoils in 1961-62, ENSR drilled fifteen borings throughout Area A and collected and analyzed soil from 2 and 4 feet for TPH and VOCs. One quarter of these samples were also analyzed for SVOCs, metals, and PCBs/Pesticides. Five of the borings were extended into groundwater and samples were collected for testing.

Two soil samples, collected in the southwest portion of Area A, yielded TPH (C23+) at 10 mg/kg and 22 mg/kg, respectively. These concentrations are below typical soil action levels for the Los Angeles area. Metals analyses indicated lead at elevated concentrations (200 mg/kg and 130 mg/kg for the 2- and 4- foot samples, respectively) at one of the two locations. The 2-foot sample was also subjected to a soluble lead test, which yielded 6.6 mg/L lead. This concentration exceeds the California hazardous waste criteria (i.e. the STLC) which is 5 mg/L. No TPH, VOCs, SVOCs, and PCBs/Pesticides were detected. ENSR concluded that the one location that exhibited elevated total and soluble lead concentrations would either require remediation or risk-based closure. ENSR states on page 42 of their report "The dredge spoil area appears to be virtually uncontaminated with the exception of one location that exhibited elevated total lead concentrations and soluble lead concentrations in excess of the STLC in both samples collected. The area exhibiting elevated lead concentrations may or may not require remediation. The need for remediation or risk-based closure is determined by the RWOCB on a case-by-case basis. At this time it is not certain how this area will be regulated." All five groundwater samples were non-detect for the analytes tested.

Law/Crandall (1996b) also prepared a report presenting the results of a Solid Waste Assessment Test (SWAT) for the former celery dump that perhaps provides additional information on the dredge sediments. (The landfill and SWAT investigations are further discussed in Section 3.1.5.) The celery dump occupied a 5- to 10-acre area within the eastern portion of Parcel A, i.e. an area that received dredge sediments. Law/Crandall performed six

separate field investigations of this parcel between 1988 and 1996. Only nine borings were drilled for the purpose of soil analytical testing. Among the relevant findings reported by Law/Crandall were the following:

- Elevated lead (80 and 83 mg/kg) was detected in soil samples from two borings. Soluble concentrations for these lead-containing samples were not determined. Organic contaminants were not detected in soil samples.
- Elevated levels of metals (arsenic, barium, cadmium, chromium, copper, lead, and silver) were detected 1991 and 1996 in various groundwater samples in excess of USEPA and California DHS drinking water maximum contaminant levels. The metals were reported to not be related to the former dump.
- The presence of the metals in groundwater was attributed to dredge spoils from Marina Del Rey and in the case of common metal ions such as magnesium, it may be the higher mineral content of the water that is characteristic of the brackish environment.

The amount of dredged sediment that has been deposited at the subject site is not well understood. ENSR (1997) reports that the average thickness of the dredge deposits throughout Area A and C is 5 feet. The sediments were dredged from an area that had received stormwater runoff that is assumed to have contained some industrial pollutants. No comprehensive testing of the dredge sediments appears to have been conducted to date. Therefore, the magnitude of the potential contamination problem is not known. However, the above findings imply that there are isolated "pockets" of soil contamination within the dredge deposits that, if excavated in conjunction with site development, would have to be managed as a contaminated waste, if not a California hazardous waste.

### 3.1.5 Former Landfill

A small area in the northeastern portion of Area A was used as a "Celery Dump" (Law/Crandall, 1996b). The former celery dump was an area that covered approximately 5 to 10 acres within the eastern portion of Parcel A. The materials disposed in the dump consisted of packing house waste, mainly celery trimmings and leaves. This waste was allowed to decompose at the surface before being discarded into the soil. The waste piles

were periodically sprayed with a mixture of the pesticide Lindane and fuel oil for odor and pest control.

The celery dump was classified as an unlined, non-hazardous, solid waste disposal site. The landfill operations were reported by Law/Crandall, Inc. (1996b) to have occurred between 1945 and 1950 without a permit and from 1950 through 1953 with a permit. The file for the landfill was closed by the Los Angeles County Engineer's Department in 1961.

Law/Crandall's 1996 SWAT report presents the results of the various soil and groundwater investigations for the former celery dump. The SWAT program was added to the California Water Code in 1984 by passage of Assembly Bill 3525 (Calderon Act). The purpose of the Act is to rank solid waste disposal sites on the basis of the potential threat they may pose to ground and surface waters, Rank 1 being the highest priority designation while Rank 10 was the lowest, notwithstanding the "unranked" landfills. The celery dump was originally classified as Rank 5, but was reclassified as Rank 6 in June 1989. The purpose of Law/Crandall's report was to present the groundwater, surface water, and soil sampling results to satisfy the regulatory requirements of the SWAT for the former celery dump. SWAT investigation procedures are performed in accordance with guidance documentation published by the State and generally considered to be a fairly rigorous investigative program. Law/Crandall performed six field investigations of this parcel between 1988 and 1996. Eight monitoring wells were installed during this period.

A summary of Law/Crandall's basic findings is provided below:

- Evidence of solid waste disposal was not found;
- Evidence of former landfill activities was not detected in soil and groundwater samples including contamination from Lindane, fuel oil, or other organic pollutants;
- There was no evidence of leachate or gas production from the former dump;
- Elevated lead (80 and 83 mg/kg) was detected in soil samples from two borings.
   Soluble concentrations for these lead-containing samples were not determined.
   Organic contaminants were not detected in soil samples.
- Elevated levels of metals (arsenic, barium, cadmium, chromium, copper, lead, and silver) were detected 1991 and 1996 in various groundwater samples in excess of

USEPA and California DHS drinking water maximum contaminant levels. The metals were reported to not be related to the former dump.

• The presence of the metals was attributed to dredge spoils from Marina Del Rey and the brackish environment.

Law/Crandall ultimately concluded that there was no evidence groundwater degradation or threat thereof, resulting from the historical activities at the former celery dump. Based on the information presented in Law/Crandall (1996b), URS concurs with this conclusion.

# 3.1.6 Groundwater Quality

Although monitoring continues on other portions of Playa Vista, three wells in Area A and Area B North (MW-17, MW-23, and MW-26) appear to be currently used for water level monitoring only (CDM, 2001b). Prior TPH and VOC data collected from the wells in 1999 and 2000 however were all non-detect (ND).

Groundwater monitoring in Area A occurred sporadically from about 1990 to 1996, during the Law/Crandall SWAT investigations (Law/Crandall, 1996b). Law/Crandall data for 1990 through 1996 indicates that groundwater is brackish, volatile organic compounds have not been consistently detected (BTEX was detected once in 1991), and semi-volatile organic compounds and TPH have not been detected. Metals such as copper, arsenic, lead, cadmium, chromium, nickel, silver, and zinc have been found in Area A groundwater above MCLs; however, these above MCL detections were not consistently observed.

Groundwater testing in Area D indicated relatively high levels of methane and other gases in the 50-foot aquifer. We found no information indicating this type of gas testing has been conducted on groundwater at the subject site.

### 3.1.7 Offsite Potential Sources of Contamination

URS reviewed regulatory agency databases (EDR, 2001, Appendix A) and visually inspected adjacent properties for evidence of offsite potential sources of contamination that could migrate onto the subject property. A Unocal/Tosco Station is located at the northeast corner of the property at 4801 Lincoln Boulevard and a Shell Station is located on the opposite side of the Street from the subject property at 4770 Lincoln Boulevard. Both gas stations are

listed as leaking underground storage tank (LUST) sites. URS conducted a file review with the California Regional Water Quality Control Board (RWQCB) to evaluate the potential impact to Area A. The files indicated that the Shell Station case is closed and that the Shell LUST did not appear to have impacted groundwater beneath Area A. Groundwater monitoring is ongoing at the Unocal/Tosco Station. Groundwater is impacted by TPH, benzene, and methyl-tert-butyl-ether (MTBE). However, the data indicate groundwater generally flows away from Area A carrying the contaminants to the north-northeast. Therefore, groundwater beneath Area A does not appear to be impacted by the Unocal/Tosco LUST.

### 3.1.8 Other Issues

Agricultural Chemicals. Historically, the subject property has been used for agricultural purposes (Clayton, 1995 and Law/Crandall, 1996a). Clayton (1995) reports that roughly the southern half of Area B North was used for agriculture during the 1950s, but the entire duration of the agricultural use of the land was not described by Clayton. Playa Vista Development provided a Site Disturbance Map (Appendix G) indicating that all of Area B North was used for farming "through (the) late 1980's". Therefore, residual agricultural chemicals such as herbicides and pesticides could be present. During the site visit, URS did not note evidence of prior agricultural use of the property or agricultural chemical use.

Agricultural chemicals are of greater concern in the event of future residential development. It does not appear that any sampling or testing for residual agricultural chemicals has been conducted for the subject property to date. This testing should be done if the site is to be residentially developed. If the site is not developed the testing would be optional.

Former Gun Club. Clayton (1995), in its site history summary reported the former presence of a gun club in the early 1920's on Parcel (Area) A. Clayton gave no reference for this information, therefore it could not be confirmed by URS. The location of the firing range could not be determined from the information provided by Clayton. Depending on the amount of use at the firing range, elevated levels of lead are a potential concern associated with the gun club. URS has not found any evidence of testing of gun club soils for potential lead contamination.

Oil Pipeline. An oil pipeline runs along the east side of Lincoln Boulevard (Lincoln is the eastern subject property boundary). A pipeline break and subsequent spill occurred in an

area approximately ½ mile south of the subject property in August 2000 (WGR Southwest, Inc., 2000). No impacts to Area A or Area B North were reported. Because the pipeline is located on the east side of Lincoln Boulevard, it appears unlikely that future spills pose a significant threat to the subject property.

Trash Dumping. Dumping of trash has been observed onsite by prior investigators. In particular, Clayton (1995) stated that they observed thousands of small steel cylinders and a crystalline material in sandy soil in the south/southwestern portion of Area A. The crystalline material was sampled and analyzed for asbestos. No asbestos was detected. The nature, precise location, and eventual disposition of these cylinders was not clarified by the previous investigators. URS did not see this material or other debris or refuse during our site visit. Very little soil was exposed as the property was very overgrown with vegetation.

# 3.1.9 Recommendations for Further Analysis

Based on the findings of our review, URS recommends the following:

- Elevated levels of methane have been detected at the south edge, up to 17,700 ppm and east edge (100 1,000 ppm range) of Area B North. If the property is to be commercially or residentially developed, additional testing for subsurface methane and other gases to augment the existing data is recommended. The investigations would focus on the area of the elevated methane detections, gas wells, and residential/commercial development areas, and on greater depths than those explored during prior investigations. If commercial or residential structures are not built at the site, the potential for subsurface methane buildup is lower (i.e. structures can "trap" and concentrate methane), as is the risk of personal injury caused by a methane explosion. Therefore, the additional data collection may not be required in the event the site is not to be developed.
- Several other potential contamination issues were identified in our review. Limited available data indicate petroleum hydrocarbon contamination in the vicinity of former oil wells. Limited soils data also suggest potential contamination issues associated with sediments that were dredged and placed on Area A during construction of Marina Del Rey. Finally, it is also known that the subject property was agriculturally developed at one time in its history suggesting the potential for residual agricultural chemicals such as pesticides. Consequently, sampling and testing of soils for oil field,

dredge sediment, and agricultural chemical contaminants may be appropriate depending on the nature of future property use.

As a final point, it is noteworthy that the Los Angeles Regional Water Quality Control Board issued a Cleanup and Abatement Order (CAO 98-125) in 1998 for the entire Playa Vista development, including Area A and Area B North. A copy of the Order is included in Appendix H. CAO 98-125 was presented to PCC and Playa Phase I Commercial Land Company, LLC on December 22, 1998. The Order is very general and requires PCC and Playa Phase I Commercial Land Company, LLC to "cleanup and abate the condition of soil and ground water caused by the release of VOC, metals, and petroleum hydrocarbons ....". Article 1.(c)(2) of the Order requires a "complete sitewide assessment and remediation of contaminated areas to support site closure." Under the Order, it would appear that the Regional Board has the authority to require environmental assessment or remediation activities at the subject property at any time. At present, the Regional Board is focussed on assessment and remediation of the former industrial sites within Area D. In interviews, they indicated no special interest in Area A or Area B North.

### 3.2 GEOTECHNICAL/GEOHAZARDS ISSUES

# 3.2.1 Geologic Setting

The site is located within the extreme western portion of the Los Angeles Basin in a region referred to as the Ballona Gap (DWR, 1961). This area is bound by the El Segundo Sand Hills to the south and the Ocean Park Plain to the north. The Ballona Gap is an erosional feature resulting from repeated fluctuations in sea level and river channel migration. The Los Angeles River, which is now confined to the Dominguez Gap to the south, has occupied the Ballona Gap in recent time. The Ballona Gap is presently occupied by Ballona Creek and forms a broad plain filled with Quaternary age alluvial deposits.

Prior to development of the area, the site consisted primarily of these alluvial deposits and recent marsh deposits. Subsequent development has resulted in the placement of a variable thickness of artificial fill, such as dredged sediments from the construction of Marina Del Rey. The underlying materials consist primarily of fine-grained alluvial deposits. These deposits are characterized by medium stiff to very stiff sandy clays and clays with interbedded, moderately dense to very dense silty sands and sands.

The site soil conditions generally consist of recently placed fills underlain by alluvial soils. The fill soils consist predominantly of sandy clays and clays with interbedded silty sands and sands. The poor quality of these soils, as well as potential environmental constraints generally preclude the re-use of these soils for other purposes. The underlying alluvial soils generally consist of fine-grained soils with interbedded layers of coarse-grained soils. The coarse-grained soils may be susceptible to liquefaction. The fine-grained soils may contain naturally occurring organic materials and are expected to be compressible.

The area is located within the Santa Monica Groundwater Basin. Groundwater below the site area is generally at a depth of approximately 10 to 20 feet.

### 3.2.2 Seismic Hazards

As is the case with most of Southern California, the site is located with in an active seismic area and may experience severe seismic shaking in the future. According to the California Division of Mines and Geology (1998), the site is not currently located within an Alquist-Priolo Special Study Zone.

The nearest active faults include the Newport/Inglewood fault, located approximately less than 10 km east of the site, the Santa Monica fault located approximately 10 km north of the site, and the Palos Verdes fault located approximately 8 km to the west, offshore (Jennings, 1994). All of these faults have been designated as "active" by the State of California. The California Division of Mines and Geology defines an active fault as one which has experienced surface rupture within the last 11,000 years (Holocene time). Other major faults include the historically active San Andreas fault located approximately 78 km northeast of the site. These faults generally trend northwesterly paralleling the trend of the San Andreas fault. Numerous smaller associated faults cross the area with similar trends. One example is the Charnock fault, located 2.3 km east of the site.

A summary of the characteristics of the faults discussed above are presented below.

TABLE 1

Roll		ivite		ing a spiniared Classical Distance from the Sing
es permanen Gusten			S. S. M. Paringer	
Newport/Inglewood	1	В	6.9	7.8
Santa Monica	1	В	6.6	10
Palos Verdes	3	В	7.1	8
Hollywood	ı	В	6.5	12.5
San Andreas	34	A	7.8	78

<sup>\*</sup> Obtained from Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada, prepared by the California Department of Conservation, Division of Mines and Geology (1998)

According to the Los Angeles County Safety Element (1990), the site is located downstream of several major water retaining structures. Reservoirs in the San Fernando Valley and Santa Monica Mountains would drain into stream courses that trend near the site if they were to fail during an earthquake. Based on this information, there appears to be a potential risk of earthquake induced flooding within the vicinity of the site resulting from the failure of one of these structures.

There also appears to be a risk of tsunami inundation as the site is located in a low lying area near the Pacific Ocean. However, if the finished site grades were above Elevation +21, the damage potential from tsunamis would be considered low.

The site is located on relatively flat terrain which minimizes the risk for seismic induced slope failure.

### 3.2.3 Liquefaction

The site is located within a liquefaction hazard-zone designated by the California Department of Conservation, Division of Mines and Geology (1999) and the Los Angeles County Department of Regional Planning (1990). The potential for liquefaction exists on the site

due to the presence of granular materials, shallow groundwater, and the potential for ground shaking from a seismic event.

In general, the liquefaction potential should be evaluated as part of the geotechnical investigation for new buildings and proposed infrastructure. A geotechnical and liquefaction evaluation investigation should be carried out in accordance with the CDMG Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California (1997).

### 3.2.4 Foundation Schemes

The main geotechnical issue affecting development at the site is the presence unstable soils that are not suitable for direct support of structures and pavements. Without improvement, large settlements are to be expected due to the compressible nature of the soils, and the settlement could take a long time to complete. In order to reduce the settlements, one foundation alternative would be to support structures on piles established in the dense soils some 50 to 70 feet below existing grade. However, such a foundation option is cost-prohibitive when considering site development for small, residential-type structures and light multi-use facilities.

A commonly accepted site preparation scheme used at the Playa Vista Development site is surcharging, and overexcavation and recompaction of the near-surface soils. Such a site preparation scheme would allow the use of conventional shallow foundations for support of moderately loaded structures while controlling and accelerating settlements. The general concept of the site preparation scheme is discussed below.

### **Site Preparation**

Prior to site grading, any debris, organic materials, deleterious materials, and uncertified fills would be removed and disposed of outside the construction limits. In order to provide adequate support, at least 2 feet of soils under pavements should be overexcavated and replaced with structural fill. In building areas, the minimum desired overexcavation and replacement is 5 feet below the footings. Excavations should typically extend laterally beyond the proposed foundation footprint, a distance equal to the depth of excavation or at least 3 feet, whichever is greater.

### **Engineered Fill**

Following the overexcavation, engineered fill would be required to bring the site grade to the required elevations. The fill should be mechanically compacted using specialized compaction equipment. However, the required overexcavation would generate soils that would not be suitable for re-use as engineered fill due to geotechnical and environmental constraints. Consequently, engineered fill materials might need to be imported to the site.

### Surcharging

Anticipated settlements can be reduced by placing a surcharge fill within the proposed areas of development. The resulting load from the surcharge fill preconsolidates the underlying compressible materials over time before construction. Anticipated surcharge fill height is about 10 feet in proposed building areas and about 2 feet in roadway areas. The surcharge fill should be kept in place for at least 6 months prior to construction.

### Recommendations for Further Analysis:

 Site-specific geotechnical investigations should be conducted when the development scheme is determined.

### 3.3 CEQA/ENTITLEMENT ISSUES

The development of the Playa Vista area has been subject to substantial and detailed public review and environmental analysis for more than 20 years. The larger planning area has been divided into four principal areas, areas A through D. Area A is primarily within an unincorporated area of the County of Los Angeles, while areas B, C and D are within the City of Los Angeles. Areas A through C are also subject to the requirements of the California Coastal Commission.

The purpose of this section is to present an assessment of potential requirements that may be imposed by the City, the County and/or the Coastal Commission in regards to on- and off-site improvements as part of the proposed Second Phase Project. While it may be possible to determine the likely fair market value of the two planning areas, the imposition of conditions of approval may result in either a reduction or change in the requested development and/or the imposition of costly improvements that will effectively reduce the market value of the two areas. However, the imposition of these capital improvements (even

in the form of mitigation measures identified in the project's EIS/EIR to reduce potential adverse environmental impacts) may increase the value of the project; that is, some capital improvements may be attractive to potential tenants and residents and may increase the marketability of the project. The following analysis seeks to account for this potential.

Information has been provided to us by PCC regarding the costs of major mitigation measures (i.e. traffic, wetlands, marina development) for Area A and Area B in the Second Phase of development. Additional and more detailed analysis would be possible if the nature of other mitigation measures for the Second Phase relative to biology, aesthetics, air quality and other issues was known.

# 3.3.1 History of Entitlements

The planning area under study consists of Area A and Area B North. Area A consists of ±138.47 acres of unincorporated land in the County of Los Angeles. Development in Area A is subject to requirements of the County (the Marina del Rey/Ballona Land Use Plan, as certified by the Coastal Commission in December 1986) and the California Coastal Commission. The Coastal Commission considers 22.49 acres of Area A to be wetlands as delineated by the California Department of Fish and Game. The U.S. Army Corps of Engineers has delineated 8.08 acres of Area A as wetlands.

Area B North consists of approximately ±54.19 acres all within the City of Los Angeles and also, like Area A, subject to the Coastal Commission. Both the Coastal Commission and the Corps of Engineers have delineated 2.58 acres of Area B as wetlands.<sup>2</sup> Development within Area B is governed by the City of Los Angeles' Playa Vista Area B Specific Plan and the Westchester/Playa Del Rey District Plan, as well as the California Coastal Act of 1976.

The County's current Land Use Plan (LUP) provides for the development of Area A as a marina and mixed-use community and Area B as a residential community as follows:

Criteria adopted by the USACOE and the Coastal Commission consider vegetation, soils and hydrology. The USACOE generally requires that all three criteria be found for an area to be designated a wetland; the Coastal Commission method specifies that an area may be delineated a wetland based on less than all the criteria. Mitigation of the 8.08 acres of delineated wetlands to be dredged and filled will be provided from the Freshwater Wetland System from the Area B Salt Marsh Restoration Project subject to USACOE Permit No. 90-426-EV.

The USACOE has previously issued a permit for the fill of these wetlands and additional federal action is not required.

TABLE 2
CURRENT LUP PERMITTED USES

	Residental Les (units)	Guidens Guidens Guidens	Retailing sq. ft.)	Hintelde av (comp)	Onioliole Original Original
Area A 3	1,226	(none)	200,000 (visitor-serving)	1,800	(none)
Area B	2,333	(none)	70,000	(none)	(none)

# 3.3.2 Current Requested Entitlements and Pending Environmental Review

At present, applications for the specific development of uses in Area A and Area B have been made by Playa Capital Company, LLC (PCC) with the City, the County and Coastal Commission. The request, referred to as the Second Phase Project, proposes the following development for Area A and Area B North:

TABLE 3
CURRENT DEVELOPMENT PROPOSAL

ASSESSMENT ASSESSMENT	Residential (Units)	Office (Sec. 15)	Retail (sq. ft.)	Hiptelse Trooms	Community Scholing Supplied
Area A	2,576	125,000	75,000	450	75,000
Area B	1,800	(none)	20,000	(none)	40,000

The processing of the proposed entitlement for Area A and Area B is in conjunction with the Second Phase project components such as a salt marsh restoration in Area A, mixed-use development in Area C and mixed-use development of a portion of Area D which was not covered by the Playa Vista First Phase project.

This plan for Area A also proposed a 48-acre marina with 700 boat slips.

The review and processing of the requested entitlement for Area A and Area B are subject to the requirements of the California Environmental Quality Act (CEQA) and compliance with other applicable local, state and federal procedures regarding tract maps, easements/dedications, USACOE permits and others.

As noted, the County's current LUP provides for the development of Area A as a marina and a mixed-use community. Playa Vista proposes to seek amendments to the LUP from the County's Board of Supervisors along with a Specific Plan/Local Implementation Plan (LIP) for the implementation of the proposed development and the LIP's subsequent approval by the Coastal Commission.

An administrative Draft EIS/EIR has been in preparation for the Second Phase for some time. The Second Phase Project (requested entitlements for Area A and Area B) is being assessed in a Joint EIS/EIR. The USACOE is the federal lead agency for the EIS and the City of Los Angeles is the local lead agency for the EIR. The EIS component does not include Area B (residential). The completion of the Draft EIS/EIR has been delayed to allow the analysis of a new alternative, The Trust for Public Land Alternative, to reflect the possible sale of portions of Area A and Area B. At this time, the publication of the Draft Joint EIS/EIR is anticipated in spring, 2002.

Since the issuance of the Notice of Preparation/Notice of Intent for the Joint EIS/EIR, an opinion was offered in the *Bolsa Chica Land Trust v. Superior Court of San Diego* case which, among other conclusions, found the Coastal Commission can limit the ability to build new or expand roads and bridges in wetlands to such projects that are necessary to maintain existing traffic capacity and, thereby, apparently prohibiting the construction of most new roads or bridges within wetland areas. In light of this Court decision, Alternative 8 (State Wetlands Alternative) has been added to the administrative Draft EIS/EIR to address potential development that could reasonably be expected to be approved by the Coastal Commission in light of the *Bolsa Chica* decision. Alternative 8 is summarized below.

TABLE 4
STATE WETLANDS ALTERNATIVES (ALTERNATIVE 8)

	38-36-90-9 Settinidas	20) u cesta (1) 21/Coesta (2)	Retailesser (Sq.fr.)		Communic Prain Cress
Area A	2,550	85,000	75,000	305	70,000
Area B	1,177	(none)	(none)	(none)	(none)

### 3.3.3 Cost of Mitigation Measures

The reduced intensities proposed in Alternative 8 would reduce the land values of Area A and Area B compared with the land uses initially proposed (see Table 2). At the same time, the range/scope of off-site mitigation measures will be reduced under Alternative 8 compared to the initial project proposed and to be evaluated in the Draft Supplemental EIS/EIR. In short, mitigation measures will cost less under Alternative 8 than under the previous proposals for Areas A and B.

To achieve the entitlements sought, the City, the County and the Coastal Commission will impose mitigation measures relative to identified adverse impacts. Among the likely and most costly mitigation measures will be traffic system improvements and marina expansion. Preliminary engineering has led to an estimate of costs for on- and off-site improvements in Areas A and B relating to major capital improvements (such as two major options under consideration to mitigate project-related traffic: the extension of Admiralty Way or the Culver Blvd. Alignment option, and dredging and construction of the expanded marina for boating). Current available cost estimates provided by PCC indicate the following costs for mitigation:

TABLE 5
MAJOR MITIGATION MEASURE COSTS

		n desectoring com Vincipal desectoring Association				
Circulation and	Admiralty Way Alt.	Culver Blvd. Alt.	Admiralty Way Alt.	Culver Blvd. Alt.	Admiralty Way Alt.	Culver Blvd. Alt.
Roadways	\$12M	\$12M	\$3.6M	\$3.5M	\$15.6M	\$15.5M
Other	Grading: \$22.6N	1		·		
Mitigation Measures (eg marina, wetlands)	Special Amenition	es: \$19.5M			\$42.	1M
				Total	\$57.7M (Admir to \$57.6M (Culv Extension alt.)	

Based on our experience, these appear to be reasonable estimates. Additional costs for mitigation measures relating to aesthetics/design/light and glare, biology (flora and fauna and wetlands restoration), air quality, noise and other issues will also be identified in the soon to be published (March 2002) Draft Supplemental EIS/EIR for Areas A and B. Information on the other likely mitigation measures is not available to us at this time.

Discussions with PCC staff indicate that Phase I development required more than \$100,000,000 in on- and off-site mitigation measures (primarily capital improvements relating to wetlands preservation, new and/or improved roadways, public utilities such as sewage and storm drain system improvements, and water, gas and electrical distribution systems, and geology/stabilization). The Phase II development envisioned for Area A and B North will require many of the same type improvements, both for environmental mitigation and for delivery of project support and infrastructure. Of the major improvements, the cost of some will be incurred regardless of the intensity of the development approved in Area A and Area B North, while other improvements are directly linked to the intensity of development that is eventually approved.

For purposes of this analysis, it is assumed the improvements and measures are independent of the intensity currently proposed under Alternative 8 for Area A and Area B; that is, these measures will be imposed for both Alternative 8 or the underlying proposed project (as

described in Table 2). Further, the estimated capital costs reflect only those costs that will be incurred as a result of the approval of the development proposals for Area A and Area B. It is recognized that some capital improvements necessary to support development of Areas A and B are being built as support for the on-going development of Areas C and D (Phase I).

An estimate of land value for Area A and Area B North has recently been prepared by TPL's appraiser. The appraisal should consider mitigation measures (identified in the administrative Draft Supplemental EIS/EIS anticipated to be released in spring 2002) that may cost more than \$100,000,000 (based on the costs identified so far for the major mitigation measures identified in Table 5).

# 3.3.4 Summary

Current estimates for implementing the major project-related mitigation measures is approximately \$57M. Cost estimates for other required mitigation measures cannot be provided until at least the Draft Supplemental EIS/EIR has been completed.

# Recommendations for Further Analysis:

 Review the Draft and Final Supplemental EIS/EIR for Phase II as soon as it is available and adjust cost estimates to reflect all mitigation measures.

### 4.0 CONCLUSION, RECOMMENDATIONS AND ESTIMATED COSTS

The results of our review indicate there are several potentially costly environmental and engineering issues that will need to be addressed if the property is acquired and developed. Notably, data reviewed indicate elevated methane gas levels at the subject site and potential contamination associated with prior land use, including oil exploration and production, agricultural use, and deposition of sediments dredged during the construction of Marina Del Rey. Soils at the site are geotechnically unstable and if development is to occur, mitigations will be required. The Draft Supplemental EIR/EIS for Phase II that addresses the subject property is in preparation; therefore certain CEQA issues could not be addressed at this time. Estimated costs with respect to these issues are provided where possible (Table 7); however, certain potential costs are not quantifiable at this time.

Based on the findings of our review, URS recommends the following:

- Additional testing for subsurface methane and other gases to augment the existing data. The investigations would focus on the area of the prior high methane detections, gas wells, and residential/commercial development areas, and on greater depths than those explored during prior investigations. In the event that the property is not developed, the additional data collection may not be required. Also, sampling and testing of soils for oil field, dredge sediment, and agricultural chemical contaminants is recommended, regardless of whether the property is developed.
- Site-specific geotechnical investigations should be conducted when and if a final development scheme is determined.
- Review the Draft and Final Supplemental EIS/EIR for Phase II as soon as it is available and adjust cost estimates to reflect all mitigation measures.

Based on the analysis provided above, URS has estimated potential site development costs related to environmental and geotechnical issues. These potential costs are summarized in Table 7, attached. Clearly, the most substantial potential costs are for construction site preparation (grading) and EIR-related mitigation measures. As indicated above, all mitigation-related costs cannot be evaluated until the complete Supplemental EIR for Phase II is made available.

# TABLE 7 SUMMARY OF ISSUES/POTENTIAL COSTS PLAYA VISTA – AREAS A AND B THE TRUST FOR PUBLIC LAND

SSUE	ThZARD/GONGERN	MITGALIONS	F KOLENAL COM
A Treat Wester Contamination			
<ol> <li>Subsurface methane/known issue</li> </ol>	Fire or explosion due to methane buildup after development	<ul> <li>Additional testing to further assess hazard</li> <li>Engineering controls including active or, more fikely, passive vents</li> </ul>	\$50,000 for additional testing If venting is required, costs could amount to \$3M
2. Dredged sediments/known issuc	Hydrocarbon and/or metals laden soil	Additional testing to further assess hazard     Removal	Unknown-currently no data to base estimate on, Initial sampling costs - \$50,000.
3. Oil Wells (7)/known issue	Well abandonment upgrades required if property is developed in vicinity of wells	Re-abandonments	\$30-200,000/well x 7 wells (up to \$1.4M)
4. Oil field wastes/potential issue	Hydrocarbon and/or metals laden drilling mud	Additional testing to further assess hazard     Removal	Chknown-currently no data to base estimate on, Initial sampling costs - \$50,000.
B. Gotechnical/Geolafartis			
1. Unstable soils *	• Settlement	<ul> <li>Excavate, recompact and surcharge unstable soils</li> </ul>	Area A - S16M Area B - S6M
2. Seismic shaking	Earthquake induced settlement     Structural failure	Piles, surcharging, excavate and replace     Engineering design measures	As above
3. Liquefaction	Earthquake induced settlement	Piles, surcharging, excavate and replace     Engineering design measures	As above
4. FEMA 500-yr Flood Zone	Flooding	None required	Potential insurance cost implications
5. Tsunami Inundation Zone	• Flooding	None required	Potential insurance cost implications
C CEOMEntitlements			
Circulation and Roadways	Construction mitigations required for approval     of development	Construct upgrades	S15.5M
2. Other Mitigations **	Mitigations required for approval of development	Construct upgrades, infrastructure grading, wetlands restoration, various other mitigations	M1.2FS

Estimate assumes a shallow foundation scheme, surcharging, overexcavation, and replacement.

g Vnamdrectory sprotects aphibiting part doc

<sup>\*\*</sup> Certainly there will be additional "other" mitigations, which cannot be quantified until the Supplemental EIS/FIR for Phase II is available.



### 5.0 REFERENCES

California Department of Water Resouces, 1961, Bulletin 104, Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Appendix A, Groundwater Geology.

California Division of Mines and Geology, 1997, CDMG Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California.

- CDMG, 1998, Maps of Known Active Fault Near-Source Zones in California and Adjacent Portions of Nevada, prepared by the California Department of Conservation, Division of Mines and Geology.
- Camp Dresser & McKee, Inc. (CDM), January 17, 2000a, Fourth Quarter 1999 Groundwater Monitoring and Progress Report, prepared for Playa Vista Capital Company, LLC.
- CDM, September 5, 2000b, Sampling and Analysis of Gas from the Southern California Gas Company Playa Del Rey Gas Storage Field, prepared for Latham & Watkins.
- CDM, November 2, 2000c, Report of Sampling and Analysis of Gas for Methane, Phase 2 Portion of Playa Vista.
- CDM, May 15, 2001a, Addendum Report of Sampling and Analysis of Gas for Methane, Phase 2 Portion of Playa Vista.
- CDM, August 13, 2001b, Second Quarter 2001 Groundwater Monitoring and Progress Report, prepared for Playa Vista Capital Company, LLC.
- City of Los Angeles, Office of the Chief Legislative Analyst Office (CLA), February 2001, City Investigation of Potential Issues of Concern for the Community Facilities District No. 4 Playa Vista Development Project Draft Study Design and Scope of Work.

- City of Los Angeles, Draft Environmental Impact Report, First Phase for Playa Vista, September 28, 1992, State Clearinghouse No. 90010510.
- City of Los Angeles, Draft Environmental Impact Report #95-0086, Second Phase for Playa Vista, June, 2001, Volume II, Affected Environment/Environmental Setting.
- Clayton Environmental Consultants, 1995, Phase I Environmental Assessment at Playa Vista.
- Davis and Namson Consulting Geologists, An Evaluation of the Subsurface Structure of the Playa Vista Project Site and Adjacent Area, November, 2001.
- Earth Consultants International, Inc., Geologic Study to Evaluate the Potential for Active Faulting Neat the Intersection of Lincoln and Jefferson Blvds. At the Playa Vista Site, 2000.
- E.D. Michael, Review of Documents, Playa Vista Development, April 27, 2000.
- ENSR, October 1997, Data Review and Limited Phase II Subsurface Site Assessment at Playa Vista Property.
- Exploration Technologies, Inc. (ETI), April 17, 2000, Subsurface Geochemical Assessment of Methane Gas Occurrences, Playa Vista Development, First Phase Project, Los Angeles, CA, prepared for the City of Los Angeles, Department of Building and Safety.
- Kleinfelder, February 7, 2001(a), Human Health Risk Assessment Playa Vista Development Los Angeles California, prepared for the City of Los Angeles.
- Kleinfelder, February 7, 2001(b), Methane Sampling Data Assessment Playa Vista Development Los Angeles California, prepared for the City of Los Angeles.
- Law/Crandall, February 23,1996, Report of Phase I Environmental Site Assessment, Playa Vista STIP.
- Law/Crandall, Inc., 1996, Report of Solid Waste Assessment Test, Celery Dump-Parcel A.

Law/Crandall, Inc., December 21, 1998, Preliminary Environmental Audit, Playa Vista Project, Parcel A.

Statistical Research Inc., December 10, 1998, Playa Vista Archaeological and Historical Project Report, prepared for the US Army Corps of Engineers.

Zymax Forensics, September 21, 2000, Comparison of Gas Analyses from Southern California Gas Company Injection Wells and from the Various Observations (Reservoir Storage) Wells, prepared for Playa Capital Company.

### Interviews

David Chernik, Playa Capital Company

Dan Cohen, Grassroots Coalition

Dr. Bernard Endres, Independent Petroleum Engineer

Kathy Tyrell, Playa Capital Company

Mark Huffman, Playa Capital Company

Mike Mulhern, City of Los Angeles Department of Public Works

Kathy Knight, Spirit of the Sage Council

Mat Epuna, California Public Utilities Commission

Rebecca Nevarrez, Los Angeles Regional Water Quality Control Board

Jeanette Vosburg, Grassroots Coalition